Claims

The following listing of claims replaces all prior versions.

1. (Currently amended) A device comprising:

a mobile embedded device having a cursor manipulator including,

the cursor manipulator including,

a sensing surface operative to sense contact by the human finger, the contact corresponding to applied pressure,

a pressure sensor array disposed on the sensing surface, wherein a measurement of the plurality of pressure sensors corresponds to an image, and

an image detector, receiving images from the pressure sensor array, generating cursor manipulation corresponding to changes between the images, wherein a sampling resolution of the sensing surface is based on at least one of periodically sampling alternating pixels in an array and monitoring at least one of a plurality of zones in an array, wherein the plurality of zones are evenly and unevenly distributed throughout the array, and where the plurality of zones populate the array with varying density ~~periodically variable~~, and wherein the sampling resolution is user selectable based on a size of a feature of a fingerprint.

2. (Original) The device, as defined in claim 1, wherein the cursor manipulation corresponds to planar directional movement.

3. (Original) The device, as defined in claim 1, wherein the cursor manipulation corresponds to data entry.

4. (Currently amended) The device, as defined in claim 1, the image detector including:

a controller;

a multiplex driver, transceiving data to and from the controller;

an image array, receiving data from the multiplex driver;

sense amplifiers, connected to the image array, transceiving data to and from the controller;

a serial port transceiving data with the controller;

current ~~read~~ random access memory (RAM) connected to the sense amplifiers;

reference RAM, connected to the current RAM;

a predictor;

a cross-correlator receiving and processing data from the current RAM, reference RAM and the predictor; and

an interpolator, receiving data from the cross-correlator, transmitting data to the predictor and the controller.

5. (Original) The device, as defined in claim 1, wherein the mobile embedded device is selected from a group comprising personal data assistants and cellular phones.

6. (Currently amended) A system for providing cursor manipulation when using a human finger comprising:

a sensing surface operative to sense contact by human finger, the contact corresponding to applied pressure, the sensing surface having a sampling resolution based on at least one of periodically sampling alternating pixels in an array and monitoring at least one of a plurality of zones in an array, wherein the plurality of zones are evenly and unevenly distributed throughout the array, and where the plurality of zones populate the array with varying density;

a pressure sensor array disposed on the sensing surface, wherein a measurement of the plurality of pressure sensors corresponds to an image; and

an image detector, receiving images from the pressure sensor array, generating cursor manipulation corresponding to changes between the images.

7. (Original) The system, as defined in claim 6, wherein the cursor manipulation corresponds to planar directional movement.

8. (Original) The system, as defied in claim 6, wherein the cursor manipulation corresponds to data input.

9. (Currently amended) The system, as defined in claim 6, the image detector including:

a controller;

a multiplex driver, transceiving data to and from the controller;

an image array, receiving data from the multiplex driver;

sense amplifiers, connected to the image array, transceiving data to and from the controller;

a serial port transceiving data with the controller;

current ~~read~~ random access memory (RAM) connected to the sense amplifiers;

reference RAM, connected to the current RAM;

a predictor;

a cross-correlator receiving and processing data from the current RAM, reference RAM, and the predictor; and

an interpolator, receiving data from the cross-correlator, transmitting data to the predictor and the controller.

10. (Currently amended) A method for finger navigation comprising:

sampling a portion of an array of pressure sensors to generate a first sample based on at least one of periodically sampling alternating pixels in an array and monitoring at least one of a plurality of zones in an array, wherein the plurality of zones are evenly and unevenly distributed throughout the array, and where the plurality of zones populate the array with varying density;

re-sampling the portion of the array to generate a second sample; and

comparing the first and second samples to determine navigational movement.

11. (Original) A method, as defined in claim 10, wherein the portion is a subset of the array.

12. (Currently amended) A method, as defined in claim 11, further comprising periodically sampling alternating pressure sensors in the array ~~wherein the subset is a periodic selection of pressure sensors~~.

13. (Original) A method, as defined in claim 11, wherein the subset is a region of pressure sensors.

14. (Original) A method, as defined in claim 13, wherein the region has an area comparable to a fingerprint.

15. (Original) A method, as defined in claim 13, wherein the subset further comprises a second region of pressure sensors.